

### REMARKS

At the outset, the Examiner is thanked for the thorough review and consideration of the subject application. The Non-Final Office Action of June 5, 2003 has been received and its contents carefully reviewed.

In the present amendment, Applicant hereby amends claims 10 and 21 and respectfully submits no new matter has been entered.

In the Office Action, the Examiner rejected claims 1-12 under 35 U.S.C. § 103(a) as being unpatentable over Chen et al. (U.S. Pat. No. 5,812,229) in view of Hoshino (U.S. Pat. No. 6,515,729), Kaneko (U.S. Pat. No. 6,504,588), and Jiang et al. (U.S. Pat. App. Pub. No. 2002/0113921); rejected claims 13-24 under 35 U.S.C. § 103(a) as being unpatentable over Wu (U.S. Pat. App. Pub. No. 2002/0109810) in view of Hoshino, Kaneko, and Jiang et al.; and rejected claims 24 and 25 under 35 U.S.C. § 103(a) as being unpatentable over Wu, Jiang et al. in view of Chen et al., Hoshino, Kaneko, and Jiang et al. The rejections of the claims are traversed and reconsideration of the claims is respectfully requested in view of the following remarks.

Preliminarily, Applicant notes that claims 24 and 25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Wu, Jiang et al. in view of Chen et al., Hoshino, Kaneko, and Jiang et al. However, Wu was never used in the body of the body of the rejection of claims 24 and 25. Accordingly, for purposes of prosecution, Applicant hereby assumes the Examiner intended to reject claims 24 and 25 under 35 U.S.C. § 103(a) as being unpatentable over Jiang et al. in view of Chen et al., Hoshino, and Kaneko.

The rejection of claims 1-12 under 35 U.S.C. § 103(a) as being unpatentable over Chen et al. in view of Hoshino, Kaneko, and Jiang et al. is respectfully traversed and reconsideration is requested.

Establishing a *prima facie* case of obviousness requires there be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine the reference teachings. As mentioned above, the teaching or suggestion to make the claimed combination must be found in the references and not based on the Applicant's disclosure using improper hindsight reasoning.

To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the Examiner must present a convincing line of reasoning as to why one of ordinary skill in the art would have found the claimed invention obvious in light of the reference teachings.

When the motivation to combine the teachings of the references is not immediately apparent, it is the duty of the Examiner to explain why the combination of the teachings is proper. The mere fact that references can be combined does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. See M.P.E.P. § 2143.01. To summarize, the fact that references may indicate all aspects of the claimed invention were individually known in the art is not sufficient to establish *prima facie* case of obviousness without some objective reason to combine the teachings of the references.

In view of the above, and for the reasons set forth below, Applicant respectfully submits a *prima facie* case of obviousness has not been established with respect to the claimed invention.

Claim 1 is allowable over the cited references in that claim 1 recites a combination of elements including, for example "a first substrate; an absorption layer on the first substrate; a cholesteric liquid crystal (CLC) color filter on the absorption layer; a first electrode on the cholesteric liquid crystal (CLC) color filter; a second substrate spaced apart from the first substrate; a second electrode on the rear surface of the second substrate; a retardation layer on the front surface of the second substrate; a polarizer on the retardation layer; a holographic film on the polarizer, the holographic film reducing an angle of light incident to the polarizer; and a liquid crystal layer between the first electrode and the second electrode." None of the cited references, including Chen et al., Hoshino, Kaneko, or Jiang et al., singly or in combination, teach or suggest at least these features of the claimed invention. Accordingly, Applicant respectfully submits that claims 2-12, which depend from claim 1, are also allowable over the cited references.

The Examiner cites Chen et al. as disclosing "a holographic color liquid crystal display device which includes a front polarizer, a liquid crystal cell, a retardation film, a back polarizer, and a reflective holographic element" but as failing to disclose the "substrate/electrode/retardation structure, absorption/filter structure, and holographic/cholesteric structure." The Examiner then cites Hoshino as disclosing "...a reflection-type color liquid crystal display device where the required substrate/electrode/retardation structure is disclosed," cites Kaneko as disclosing "[a] reflection-type color liquid crystal display device ...where the required absorption/filter

structure is disclosed,” and cites Jiang et al. as disclosing “... a ...liquid crystal display panel... where the required holographic/cholesteric structure is disclosed.” In concluding the rejection, the Examiner states it would have been obvious to “...include required substrate/electrode/retardation structure, absorption/filter structure, and holographic/cholesteric structure in Chen et al. as taught by Hoshino, Kaneko and Jiang et al. respectively, in order to have a liquid crystal display device with better performance.”

Applicant respectfully submits there is no motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine Chen et al., Hoshino, Kaneko, or Jiang et al. and arrive at the claimed invention.

First, by stating Chen et al. lacks “the substrate/electrode/retardation structure, absorption/filter structure, and holographic/cholesteric structure,” Applicant respectfully submits the deficiencies of Chen et al. have been generalized to the point that the applied references, including Chen et al., Hoshino, Kaneko, and Jiang et al., have been combined while disregarding the claimed invention “as a whole.” Applicant respectfully submits the “as a whole” requirement does not enable the claimed invention to be abstracted in such a manner as to fit the disclosures of a combination of references together and arrive at a superficial resemblance of the claimed invention. Rather, the “as a whole” requirement ensures that each of the combination of claimed elements are considered in making a proper determination of obviousness. Applicant respectfully submits Chen et al. doesn’t merely lack “substrate/electrode/retardation,” “absorption/filter,” and “holographic/cholesteric” structures, rather Chen et al. fails to show the combination of elements included within claim 1, as set forth above. Similarly, Applicant respectfully submits neither Hoshino, Kaneko, nor

Jiang et al. cures the deficiencies of the Chen et al. in light of the claimed invention "as a whole."

Second, and according to M.P.E.P. § 2144.02, the rationale to support a rejection under 35 U.S.C. § 103 may rely solely on logic and sound scientific principle. However, when an Examiner relies on a scientific theory, evidentiary support for the existence and meaning of that theory must be provided.

Therefore, assuming *arguendo* Hoshino, Kaneko, and Jiang et al. each disclose the "required substrate/electrode/retardation, absorption/filter, and holographic/cholesteric structures," respectively, it appears, from the Examiner's theory, that incorporating the "required substrate/electrode/retardation structure, absorption/filter structure, and holographic/cholesteric structure in Chen et al. as taught by Hoshino, Kaneko and Jiang et al. respectively" would enable one of ordinary skill in the art to obtain "a liquid crystal display device with better performance," and thus render the claimed invention obvious.

Applicant respectfully submits, however, evidentiary support for the existence and meaning of the theory outlined above must be, but has not been, provided. In the absence of such support, Applicant respectfully submits Chen et al., Hoshino, Kaneko, and Jiang et al. have merely been combined using the presently claimed invention as a template via improper hindsight reasoning.

Moreover, Applicant respectfully submits combining the aforementioned references would not only improperly change the principle of operation of Chen et al. but would also improperly render Chen et al. unsatisfactory for its intended purpose. Accordingly, Applicant respectfully submits a liquid crystal display device with "better performance" would not be obtained.

Further, and while claims 2-12 were included within the rejection of claim 1 as being under 35 U.S.C. § 103(a) as being unpatentable over Chen et al. in view of Hoshino, Kaneko, and Jiang et al., Applicant respectfully submits the subject matter of claims 2-12 has not been addressed within the rejection. Accordingly, and for purposes of expediting prosecution, Applicant respectfully requests the subject matter of claims 2-12 be addressed within the body of the rejection.

The rejection of claims 13-24 under 35 U.S.C. § 103(a) as being unpatentable over Wu in view of Hoshino, Kaneko, and Jiang et al. is respectfully traversed and reconsideration is requested.

Claim 13 is allowable over the cited references in that claim 13 recites a combination of elements including, for example "a first substrate; a second substrate; an absorption layer formed on the first substrate; a first alignment layer formed on the absorption layer; a cholesteric liquid crystal color filter layer formed on the first alignment layer; a first electrode formed on the cholesteric liquid crystal color filter layer; a second alignment layer formed on the first electrode; a second electrode formed on the second substrate; a third alignment layer formed on the second electrode; a liquid crystal layer interposed between the second alignment layer and the third alignment layer; a retardation layer formed on the second substrate; a polarizer formed on the retardation layer; a holographic film disposed on the polarizer; and a diffusion film formed on the holographic film." None of the cited references, including Wu, Hoshino, Kaneko, or Jiang et al., singly or in combination, teach or suggest at least these features of the claimed invention. Accordingly, Applicant respectfully submits that claims 14-23, which depend from claim 13, are also allowable over the cited references.

Claim 24 is allowable over the cited references in that claim 24 recites a combination of elements including, for example "forming a first substrate; forming an absorption layer on the first substrate; forming a cholesteric liquid crystal (CLC) color filter on the absorption layer; forming a first electrode on the cholesteric liquid crystal (CLC) color filter; forming a second substrate spaced apart from the first substrate; forming a second electrode on the rear surface of the second substrate; forming a retardation layer on the front surface of the second substrate; forming a polarizer on the retardation layer; forming a holographic film on the polarizer, the holographic film reducing an angle of light incident to the polarizer; and forming a liquid crystal layer between the first electrode and the second electrode." None of the cited references, including Wu, Hoshino, Kaneko, or Jiang et al., singly or in combination, teach or suggest at least these features of the claimed invention.

The Examiner cites Wu as disclosing "half reflection type liquid crystal display where the device provides a half reflection type LCD comprising a liquid crystal panel" but as failing to disclose the "substrate/electrode/retardation structure, absorption/filter structure, and holographic/cholesteric structure." The Examiner then cites Hoshino as disclosing "...a reflection-type color liquid crystal display device where the required substrate/electrode/retardation structure is disclosed," cites Kaneko as disclosing "[a] reflection-type color liquid crystal display device ...where the required absorption/filter structure is disclosed," and cites Jiang et al. as disclosing "... a ...liquid crystal display panel... where the required holographic/cholesteric structure is disclosed." In concluding the rejection, the Examiner states it would have been obvious to "...include required substrate/electrode/retardation structure, absorption/filter structure, and

holographic/cholesteric structure in Wu as taught by Hoshino, Kaneko and Jiang et al. respectively, in order to have a liquid crystal display device with better performance.”

Applicant respectfully submits there is no motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine Wu, Hoshino, Kaneko, and Jiang et al. and arrive at the claimed invention. Similar arguments made above with respect to the rejection of claim 1 are equally applicable with respect to the rejection of claims 13 and 24. Accordingly, and in the absence of any objective reason to combine the references, Applicant respectfully submits Wu, Hoshino, Kaneko, and Jiang et al. have merely been combined using the presently claimed invention as a template via improper hindsight reasoning.

Further, and while claims 14-23 were included within the rejection of claim 13 as being under 35 U.S.C. § 103(a) as being unpatentable over Wu in view of Hoshino, Kaneko, and Jiang et al., Applicant respectfully submits the subject matter of claims 14-23 has not been addressed within the rejection. Accordingly, and for purposes of expediting prosecution, Applicant respectfully requests the subject matter of claims 14-23 be addressed within the body of the rejection.

The rejection of claims 24 and 25 under 35 U.S.C. § 103(a) as being unpatentable over Jiang et al. in view of Chen et al., Hoshino, Kaneko is respectfully traversed and reconsideration is requested.

As mentioned above, claim 24 is allowable over the cited references in that claim 24 recites a combination of elements including, for example “forming a first substrate; forming an absorption layer on the first substrate; forming a cholesteric liquid crystal (CLC) color filter on the absorption layer; forming a first electrode on the cholesteric liquid crystal (CLC)



color filter; forming a second substrate spaced apart from the first substrate; forming a second electrode on the rear surface of the second substrate; forming a retardation layer on the front surface of the second substrate; forming a polarizer on the retardation layer; forming a holographic film on the polarizer, the holographic film reducing an angle of light incident to the polarizer; and forming a liquid crystal layer between the first electrode and the second electrode.” None of the cited references, including Jiang et al., Chen et al., Hoshino, or Kaneko, singly or in combination, teach or suggest at least these features of the claimed invention.

Claim 25 is allowable over the cited references in that claim 25 recites a combination of elements including, for example “forming a first substrate; forming a second substrate; forming an absorption layer on the first substrate; forming a first alignment layer on the absorption layer; forming a cholesteric liquid crystal color filter layer on the first alignment layer; forming a first electrode on the cholesteric liquid crystal color filter layer; forming a second alignment layer on the first electrode; forming a second electrode on the second substrate; forming a third alignment layer on the second electrode; forming a liquid crystal layer interposed between the second alignment layer and the third alignment layer; forming a retardation layer on the second substrate; forming a polarizer on the retardation layer; forming a holographic film disposed on the polarizer; and forming a diffusion film on the holographic film.” None of the cited references, including Jiang et al., Chen et al., Hoshino, or Kaneko, singly or in combination, teach or suggest at least these features of the claimed invention.

The Examiner cites Jiang et al. as disclosing “a high-brightness color liquid crystal display panel employing light recycling therein...” but as failing to disclose the required

reflective structure, substrate/electrode/retardation structure, absorption/filter structure, and holographic/cholesteric structure.” The Examiner then states Jiang et al. discloses the “required holographic/cholesteric structure” and cites Chen et al. as disclosing “[a] holographic type reflective color liquid crystal display device where the required reflective structure is disclosed,” cites Hoshino as disclosing “...a reflection-type color liquid crystal display device where the required substrate/electrode/retardation structure is disclosed,” and cites Kaneko as disclosing “[a] reflection-type color liquid crystal display device ...where the required absorption/filter structure is disclosed.” In concluding the rejection, the Examiner states it would have been obvious to “...include required reflective structure, substrate/electrode/retardation structure, absorption/filter structure, and holographic/cholesteric structure in Jiang et al. as taught by Chen et al., Hoshino, Kaneko... , in order to have a liquid crystal display device with better performance.”

Applicant respectfully submits there is no motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine Jiang et al., Chen et al., Hoshino, and Kaneko and arrive at the claimed invention. Similar arguments made above with respect to the rejection of claims 1, 13, and 24 are equally applicable with respect to the present rejection of claims 24 and 25. Accordingly, and in the absence of any objective reason to combine the references, Applicant respectfully submits Jiang et al., Chen et al., Hoshino, and Kaneko have merely been combined using the presently claimed invention as a template via improper hindsight reasoning.

Applicant believes the application in condition for allowance and early, favorable action is respectfully solicited. Should the Examiner deem that a telephone conference would

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Group Art Unit: 2826  
Reply to Office Action of June 5, 2003

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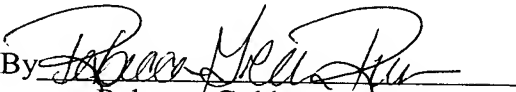
further the prosecution of this application, the Examiner is invited to call the undersigned attorney at (202) 496-7500.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136. Please credit any overpayment to deposit Account No. 50-0911.

Respectfully submitted,

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Date: October 3, 2003

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